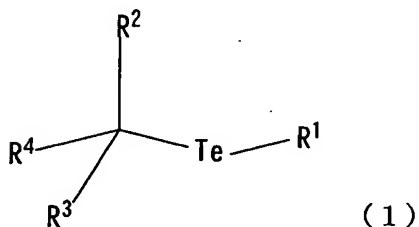


CLAIMS:

1. A process for producing a living radical polymer characterized in that a vinyl monomer is polymerized with use
 5 of a living radical polymerization initiator represented by the formula (1) and a compound represented by the formula (2)



wherein R^1 is C_1 - C_8 alkyl, aryl, substituted aryl or an aromatic heterocyclic group, R^2 and R^3 are each a hydrogen
 10 atom or C_1 - C_8 alkyl, and R^4 is aryl, substituted aryl, an aromatic heterocyclic group, acyl, oxycarbonyl or cyano



wherein R^1 is the same as above.

2. A process according to claim 1 wherein R^1 in the
 15 living radical polymerization initiator represented by the formula (1) is C_1 - C_4 alkyl, phenyl, naphthyl, pyridyl, furyl or thienyl, R^2 and R^3 are each a hydrogen atom or C_1 - C_8 alkyl, and R^4 is phenyl, naphthyl, pyridyl, furyl, thienyl, methoxycarbonyl, ethoxycarbonyl or cyano.

- 20 3. A process according to claim 1 wherein R^1 in the living radical polymerization initiator represented by the

formula (1) is C₁-C₄ alkyl, R² and R³ are each a hydrogen atom or C₁-C₄ alkyl, and R⁴ is phenyl, substituted phenyl, methoxycarbonyl or ethoxycarbonyl.

4. A process according to claim 1 wherein R¹ in the
5 compound represented by the formula (2) is C₁-C₄ alkyl, phenyl, naphthyl, pyridyl, furyl or thienyl.

5. A process according to claim 1 wherein R¹ in the
compound represented by the formula (2) is C₁-C₄ alkyl or
phenyl.

10 6. A living radical polymer obtained by polymerizing a vinyl monomer with use of a living radical polymerization initiator represented by the formula (1) and a compound represented by the formula (2).

7. A mixture of a living radical polymerization
15 initiator represented by the formula (1) and a compound represented by the formula (2).

8. A mixture according to claim 7 wherein the living
radical polymerization initiator represented by the formula
(1) is an organotellurium compound represented by the formula
20 (1) wherein R¹ is C₁-C₄ alkyl, R² and R³ are each a hydrogen atom or C₁-C₄ alkyl, and R⁴ is aryl, substituted aryl or oxycarbonyl, and the compound represented by the formula (2) is a compound wherein R¹ is C₁-C₄ alkyl or phenyl.

9. A process for producing a diblock copolymer wherein
25 a compound of the formula (1) and a compound of the formula (2) are used when a homopolymer is prepared from the first of

monomers and/or when the diblock copolymer is subsequently prepared.

10. A process for producing a triblock copolymer wherein a compound of the formula (1) and a compound of the formula (2) are used at least once when a homopolymer is prepared from the first of monomers, or when a diblock copolymer is subsequently prepared, or when the triblock copolymer is subsequently prepared.

11. A process for producing a diblock copolymer comprising mixing together an (meth)acrylic acid ester monomer, a living radical polymerization initiator represented by the formula (1) and a compound of the formula (2) to prepare a poly(meth)acrylate, and subsequently mixing an aromatic unsaturated monomer with the product to obtain an (meth)acrylate-aromatic unsaturated monomer diblock copolymer.

12. A process for producing a triblock copolymer comprising mixing together an (meth)acrylic acid ester monomer, a living radical polymerization initiator represented by the formula (1) and a compound of the formula (2) to prepare a poly(meth)acrylate, subsequently mixing an aromatic unsaturated monomer with the product to obtain an (meth)acrylate-aromatic unsaturated monomer block copolymers, and subsequently mixing an (meth)acrylic acid ester monomer or aromatic unsaturated monomer with the copolymer to obtain the triblock copolymer.

13. A process according to any one of claims 1 to 5

wherein the vinyl monomer is at least one monomer selected from the group consisting of (meth)acrylic acid ester monomer, aromatic unsaturated monomer (styrene type monomer), carbonyl-containing unsaturated monomer, (meth)acrylonitrile and (meth)acrylamide type monomer.

14. A process according to any one of claims 1 to 5 wherein the living radical polymer is a random copolymer.

15. A process according to any one of claims 1 to 5 wherein the living radical polymer is a block copolymer.